CUBIT Capability Proposal

Technical Area Geometry, Meshing, Infrastructure, GUI, Graphics, etc..	**Technical Lead** Cubit Developer in charge of technical area
Geometry	Philippe Pebay

MRD Description
Describe the capability in terms of how a user would see it.

Complete the addition of midsurface support into CUBIT.

SRS Description
What needs to be done by Cubit developers to implement this capability? Break the tasks into steps if applicable. (Steps should be on the order of 2 man-weeks or more)

1. investigate the use of offsets to create midsurfaces for equidistant surfaces 2. implement automation to pair surfaces using a suitable technique 3. automate trimming / extension of misurfaces to the boundary 4. investigate how to transform thin 3D meshes into shell meshes.

Justification
Describe why this is important and what impact it will have if it is implemented. (or not implemented).

Midsurface support will be a very useful addition to CUBIT, that is already requested by some users, in particular in the goal of providing a shell element generation capability. In addition, midsurfacing will also yield other interesting capabilities, such as domain decomposition.

Resources Who will work on this	**Time estimate** How much time will it take in man-weeks	**Targeted Release** 10.2 (August 06), 10.3 (March 2007), 10.4 (August 2007), Future (beyond FY07)
Philippe Pebay	10 weeks	10.2

Submitted By:	**Date:**
Philippe Pebay	4/3/06